WHAT IS CLAIMED IS:

1. Single-ended differential circuit comprising:

first and second complementary devices having first, second, and third terminals, respectively, wherein current flowing from the second terminal to the third terminal has its quantity and direction being varying in dependant on the voltage driven to the first terminal, wherein the currents flowing through the first and second complementary devices vary in opposite relationship;

an input terminal connected to the first terminals of said first and second complementary devices; and

biasing means connected to the first, second and third terminals of the first and second devices, for determining biasing points of the first and second complementary devices such that the first and second devices operates in a differential relationship with respect to a signal driven to said input terminal, wherein the biasing means determining the biasing points such that one of the first and second devices is substantially active.

2. The single-ended differential circuit of Claim 1, wherein said biasing means determines biasing points of the first and second complementary devices such that current flowing from the second terminal to the third terminal of the first complementary device is in opposite phase to current flowing from the second terminal to the third terminal of the second complementary device.

3. The single-ended differential circuit of Claim 2, wherein said first and second complementary devices are N type and P type MOSFET, respectively.

4. Single-ended differential RF mixer circuit comprising:

first and second complementary devices having first, second, and third terminals, respectively, wherein current flowing from the second terminal to the third terminal has its quantity and direction being varying in dependant on the voltage driven to the first terminal, wherein the currents flowing through the first and second complementary devices vary in opposite relationship;

an input terminal connected to the first terminals of the first and second complementary devices; and

biasing means connected to the first, second and third terminals of the first and second devices, for determining biasing points of the first and second complementary devices such that the third terminals of the first and second complementary devices are maintained at a predetermined voltage value with respect to the second terminals of the first and second complementary devices, and

wherein impedance values at the third terminals vary in accordance with variation of a signal driven to the first terminals of said first and second complementary devices, when the first and second complementary devices are biased such that voltage values at the second and third terminals are adjusted to a predetermined value.

5. The Single-ended differential RF mixer circuit of Claim 4, further comprising means for driving the third terminal of the first complementary device and the second terminal of the second complementary device with a signal having a predetermined frequency.

6. The single-ended differential RF mixer circuit of Claim 5, wherein said biasing means determines biasing points of the first and second complementary devices such that current flowing from the second terminal to the third terminal of the first complementary device is in opposite phase to current flowing from the second terminal to the third terminal of the second complementary device in accordance with the polarity of the signal driven to the input terminal.

7. The single-ended differential RF mixer circuit of Claim 5, wherein said first and second complementary devices are N type and P type MOSFET, respectively.

8. Single-ended differential RF mixer circuit comprising:

first complementary unit having first and second complementary devices which have first, second, and third terminals, respectively, wherein current flowing from the second terminal to the third terminal has its quantity and direction being varying in dependant on the voltage driven to the first terminal, wherein the currents flowing through the first and second complementary devices vary in opposite relationship;

second complementary unit having third and fourth complementary devices which have first, second, and third terminals, respectively, wherein current flowing from the second terminal to the third terminal has its quantity and direction being varying in dependant on the voltage driven to the first terminal, wherein the currents flowing through the first and second complementary devices vary in opposite relationship;

first input terminal connected to the first terminals of said first and second complementary devices;

second input terminal connected to the first terminals of said third and fourth complementary devices; and

biasing means connected to the first, second and third terminals of the first and second devices, for determining biasing points of the first and second complementary devices such that the third terminals of the first and second complementary devices are maintained at a predetermined voltage value with respect to the second terminals of the first and second complementary devices and for determining biasing points of the third and fourth complementary devices such that the third terminals of the third and fourth complementary devices are maintained at a predetermined voltage value with respect to the second terminals of the third and fourth complementary devices, and

wherein impedance values at the third terminals vary in accordance with variation of a signal driven to the first terminals of said first through fourth complementary devices, when the first through fourth complementary devices are biased such that voltage values at the second and third terminals are adjusted to a predetermined value.

9. The Single-ended differential RF mixer circuit of Claim 8, further comprising means for driving the third terminals of the first and third complementary devices and the second terminals of the second and fourth complementary devices with a signal having a predetermined frequency.

10. The single-ended differential RF mixer circuit of Claim 9, wherein said biasing means determines biasing points of the first and second complementary devices such that

current flowing from the second terminal to the third terminal of the first complementary device is in opposite phase to current flowing from the second terminal to the third terminal of the second complementary device in accordance with the polarity of the signal driven to the first input terminal and

current flowing from the second terminal to the third terminal of the third complementary device is in opposite phase to current flowing from the second terminal to the third terminal of the fourth complementary device in accordance with the polarity of the signal driven to the second input terminal.

11. The single-ended differential RF mixer circuit of Claim 10, wherein said first and third complementary devices are N type MOSFET and said second and fourth complementary devices are P type MOSFET.

12. Single-ended differential amplifier circuit comprising:

first unit having first and second active devices which have first, second, and third terminals, respectively, wherein current flowing from the second terminal to the third terminal has its quantity and direction being varying in dependant on the voltage driven to the first terminal;

second unit having third and fourth devices which have first, second, and third terminals, respectively, wherein current flowing from the second terminal to the third terminal has its quantity and direction being varying in dependant on the voltage driven to the first terminal; and

biasing means connected to the first terminals of the first and third active devices and an input terminal, and connected to the second terminals of the second and fourth active devices and an output terminal, for determining biasing points of the first and second units such that the first and second units operates in a differential relationship with respect to a signal driven to said input terminal, wherein said biasing means determines the biasing points such that one of the first and second units is substantially active.

13. The single-ended differential amplifier circuit of Claim 12, wherein said biasing means determines biasing points of the first and second units such that current flowing from the first active device to the second active devices of the first unit is in opposite phase to current flowing from the third active device to the fourth active device of the second unit.

14. The single-ended differential amplifier circuit of Claim 13, wherein said first and second active devices are N type MOSFET and said third and fourth active devices are P type MOSFET.